



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

D6104-007

Job Sheet 175914



5062575

Part No: D6104-007

Job Qty: 12 ea

Part Name: Round Billet, 17-4



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 4/12/18

Job Tracking No:

Due Date: 5/8/18

Created By: Chantal Lavoie

Type: Stock

Description:

Note: DWG REV B

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Purchasing	12 pcs		5/8/18	0.00	0.00	Purchasing		DAS APR 18 2018
110	Packaging	12 pcs		5/8/18	0.00	0.00	Packaging2		11 APR 18 2018
120	QC	12 pcs		5/8/18	0.00	0.00	QC18		9-89 APR 18 2018
130	Packaging	12 pcs		5/8/18	0.00	0.00	Packaging3-2		5BL 18/04/25
140	QC21-SA	12 Ea		5/8/18	0.00	0.00	QC21		DAS APR 25 2018

Part Op 100 - Issue P/O: 39599 b) Ø4.50" x 5.10" long
Descriptions: 110 - Ensure material certification is attached
120 - Ensure Material certification comply to Dwg D6104

APR 13 2018

X12

27
9-89
DAS
13
9-89

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6104-007P	17-4 SS Roundbar 4.50"Od	12 pcs (1 ea)	100-Purchasing	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Purchasing	D6104-007P	12	0	0

Part Specifications

Specifications could not be found.

Plex 4/12/18 7:35 AM dart.lavoie.chantal

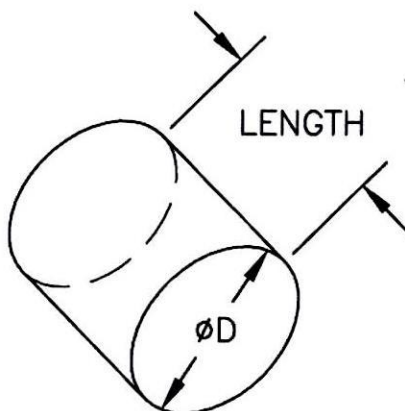


DESIGN FF	DRAWN BY 	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED

02.11.29

SPECIFICATION CONTROL DRAWING



MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRC)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3570866

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 17-APR-18	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN		BOL No 3570866-2	

Shipment Details			Final Destination Branch - TOR				
Order No	Line No	Item No	Description				
5108715	5	14998.MO	4.5000.RD.17CR-4NI.STAINLESS RT.SOL TR.COND A.132.0000-156.0000 CUT TO 5.1 IN (+ .1250/- .0000 IN (USE HT # 658H ONLY)) - BAND SAW CUTTING SPECIFICATIONS: AMS 5643 ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com				
Purchase Order No		Part Number		Ordered Qty	Invoice Qty		
39599		YOUR ITEM NUMBER: D6104-007		12.00 PCS	12.00 PCS		
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No.	Mill/Source	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
121763364	NORTH AMERICAN STAINLESS			12			283.7116

Date Printed: 17-APR-2018 02:45:59 PM

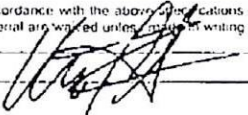


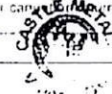
Castle Metals®

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Page 2 of 2

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A. M. Castle & Co. within 60 days of the shipment. Material cut to the correct size or material cut by the customer cannot be returned for credit.			
Reviewed by Authorized Castle Metals Representative		Date:	Name: APR 17 2018





North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

METALLURGICAL TEST REPORT

6870 Highway 42 East
Ghent, KY 41045-9615
(502) 347-6000

Certificate: 381256 12
Customer: 007209 001

Mail To:
CASTLE METALS
2150 ARGENTIA ROAD
MISSISSAUGA, ON L5N 2K7

Ship To:
CASTLE METALS
2150 ARGENTIA ROAD
MISSISSAUGA, ON L5N 2K7

Date: 2/13/2018 Page: 1

Steel: 630 (17-4)

Finish: HR

Corrosion:

Red Ratio: 3.7 :1

Your Order: 38993

NAS Order: PN 0087808 08

Heat Treat Code: 45,249

PRODUCT DESCRIPTION:

Round Bar, Hot Rolled, Annealed, Rough Turned
UNS S17400; EN 10204 3.1, ASTM A484/16, MACRO OK, AMS 5643U
ASTM A564/13, AMS 2303F, ASME SA564-07, ASTM F899/13b
SOL. ANNEALED @ 1900F MIN FOR 1 HR MIN. and air cooled to RT
UT per API6A PSL3, ASTM A388-S1 criteria, UT passed
H900 MECH. PROPERTIES ARE CAPABILITY ONLY*

REMARKS:

COMPLIES W/REQUIREMENTS OF DEAR 252.225-7009 EU DIRECTIVE
2011/65/EU. ROHS. EAF+AOD+CC. NO WELD REPAIR. MILED AND MFG
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION



Product Id	Skid #	Diameter	Size	Weight	-----Length-----	Mark	Pieces	Commodity Code
BJ2786 4		4.5000		1,316	144.00	10	1	

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323

CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan) Chemical Analysis per ASTM A751/14a

NAS Heat	CM	C %	CB %	CO %	CR %	CU %	MN %	MO %	N %	NI %
658H	US	.043	.323	.06	15.24	3.37	.79	.019	.020	4.17
	P %	S %	SI %	TA %	TI %					
	.020	.0136	.60	.0050	.0035					

MECHANICAL PROPERTIES

Product Id	1 d o f c e	HB No.	Grain No.	Ferrite %	TS-900CAP KSI	YS-900CAP KSI	El-900CAP % 4D	RA-900CAP %	RC-900CAP No.	FREQ. No.
BJ2786 4	R L	352.0	8.0	.07	204.52	179.11	11.50	44.74	42.0	.14

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.

KRIS LARK

2/13/2018



North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

METALLURGICAL TEST REPORT

6870 Highway 42 East
Ghent, KY 41045-9615
(502) 347-6000

Certificate: 381256 12
Customer: 007209 001
Mail To:
CASTLE METALS
2150 ARGENTIA ROAD
MISSISSAUGA, ON L5N 2K7

Ship To:
CASTLE METALS
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IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Product Id	Skid #	Diameter	Size	Weight	-----Length-----	Mark	Pieces	Commodity Code
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CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan) Chemical Analysis per ASTM A751/14a

NAS Heat	CM
658H	US

MECHANICAL PROPERTIES

Product Id	1 d o i c r	SEV. No.
BJ2786 4	R L	.07

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.

KRIS LARK

2/13/2018

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D6104-007
 DATE: APR 18 2018

PO / BATCH NO.: 039599/5062519

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 12 pcs
 QUANTITY INSPECTED: 12 pcs
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 4.50
 THICKNESS RECEIVED: 4.50
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	☒ N	
CORRECT FINISH	☒ Y	N	
CORROSION	☒ Y	N	
CORRECT GRAIN DIRECTION	☒ Y	N	
CORRECT MATERIAL PER M-DRAWING	☒ Y	N	AMS 5643
CORRECT THICKNESS	☒ Y	N	
PHOTO REQUIRED	Y	☒ N	
CORRECT REF # TO LINK CERT	☒ Y	N	Heat # 6584
CORRECT MATERIAL IDENTIFICATION	☒ Y	N	
CORRECT M# ON THE MATERIAL	☒ Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	☒ N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	☒ N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>DAS</u> <u>11</u> DATE: <u>9-89 APR 18 2018</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in